## **ABSTRACT**

Provided are fluorescent substrates for  $\beta$ -lactamases having the general formula I:

$$\begin{array}{c|c}
R & H & A \\
O & N & Z \\
CO_2R' & & & \\
\end{array}$$
(I)

in which R is a benzyl, 2-thienylmethyl, or cyanomethyl group; R' is selected from the group consisting of H, physiologically acceptable salts or metal, ester groups, ammonium cations, --  $CHR_2OCO(CH_2)_nCH_3$ , --  $CHR_2OCO(CH_3)_3$ , acylthiomethyl, acyloxy-alpha-benzyl, deltabutyrolactonyl, methoxycarbonyloxymethyl, phenyl, methylsulphinylmethyl,  $\beta$ -morpholinoethyl, dialkylaminoethyl, and dialkylaminocarbonyloxymethyl, in which  $R_2$  is selected from the group consisting of H and lower alkyl; A is selected from the group consisting of S, O, SO, SO<sub>2</sub> and  $CH_2$ ; and Z is a donor fluorescent moiety. Also provided are methods of use of the compound of general formula I.